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AMENDMENTS TO THE CLAIMS SHOWING CHANGES**IN THE CLAIMS:**

1. (Amended) A method for controlling a bicycle transmission based on rider-selected wheel speeds, the method comprising the steps of:

- actuating a controller mounted on a bicycle to enter a setting mode;
- manually shifting the bicycle transmission into a selected gear during the setting mode by operating a shift actuator coupled to the bicycle transmission;
- storing a bicycle speed for the selected gear in a memory of the controller;
- repeating said steps of shifting and storing for each rider-selected gear; and
- automatically shifting the bicycle transmission by the controller [in accordance with] using only the stored bicycle speeds during an automatic mode.

10. (Amended) A method as in claim 1 wherein the step of shifting the bicycle transmission in a selected gear includes the step of [further comprising the step of] actuating a shift control switch coupled to the controller to shift the bicycle transmission.

17. (Amended) A shift actuator for a multiple-gear bicycle comprising:

- a housing adaptable to be mounted on the bicycle;
- a wheel speed input for receiving a wheel speed signal that is representative of the bicycle wheel speed;
- a gear control output for transmitting a control signal to a gear shifter of the bicycle;
- a mode selector actuable by a rider to select between at least a setting mode and an automatic mode;

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a shift point selector actuatable by the rider to select, while the shift actuator is in the setting mode, at least one shift point which only relates a current wheel speed to a current bicycle gear;

a memory for storing at least one shift point which only relates at least one stored wheel speed to a respective stored gear; and

a controller coupled to the wheel speed input, the gear control output and the mode selector, the controller causing said at least one shift point to be stored in the memory when the shift actuator is in the setting mode and the rider actuates the shift point selector, the controller, while in the automatic mode, controlling the gear shifter through the gear control output such that when the wheel speed signal approximately equals the stored wheel speed, the gear shifter shifts the bicycle into the stored gear.

24. (Amended) A medium onto which has been prerecorded a computer program which, when executed by a gear shifter controller mounted on a multiple-gear bicycle, is capable of performing the following steps:

actuating a controller mounted on the bicycle to enter a setting mode;

receiving a manual shift signal to shift [manually shifting] the bicycle transmission into a selected gear during the setting mode [by operating] when a rider operates a shift actuator coupled to the bicycle transmission;

storing a bicycle speed for the selected gear in a memory of the controller;

repeating said steps of shifting and storing for each of the [rider-]selected gears; and

automatically shifting the bicycle transmission by the controller [in accordance with] using only the stored bicycle speeds during an automatic mode.